

AMENDMENTS TO THE SPECIFICATION

Please replace the paragraph beginning at page 5, line 5, with the following:

While not wishing to bound by any theory, in one embodiment, the present invention provides a method of stabilizing mercury and other heavy metals in a particulate material comprising, sequentially or simultaneously, contacting a metal reagent with the particulate material to amalgamate with the mercury present in the particulate material, contacting a sulfur-containing compound with the particulate material to form an insoluble metal sulfide and agitating the various additives and the particulate material to entrain oxygen in the particulate material in order to assist the sulfur-containing compound to form the insoluble metal sulfide. The metal reagent is preferably any metal from Groups 1B, 2B, [[8B]]4B and 4A of the Periodic Table of Elements. The sulfur-containing compound is preferably any sulfur-containing compound that will disassociate enough in the particulate material to allow the sulfur to participate in chemical reactions to form an insoluble metal sulfide.

Please replace the paragraph beginning at page 9, line 18, with the following:

The metal reagent [[12]]20 can be any form of an elemental metal chosen from Groups 1B, 2B, [[8B]]4B, and 4A in the Periodic Table of Elements. In one embodiment, the metal reagent is an elemental form of zinc, tin, copper, titanium, lead, or mixtures thereof. It is also believed that compounds of these various forms are suitable for use in the invention; however, the compounds must disassociate enough to allow the metal to amalgamate with the mercury. Thus, suitable compounds may include but are not limited to tin chloride, zinc sulfate, or copper

sulfate. Even though these metals will amalgamate or form a compound with mercury, it should be noted that the amounts of most of these metals that can be present in particulate materials is regulated by the Resource Conservation and Recovery Act (RCRA). Thus, in one embodiment, the metal reagent is preferably tin, since tin is one of the few metals that will amalgamate with mercury that is not regulated under RCRA.

Please replace the paragraph beginning at page 14, line 4, with the following:

Often, excess unreacted sulfides or polysulfides will remain in the particulate material once the insoluble metal sulfide has formed. Since sulfides are often regulated by many environmental regulations, the excess sulfides may need to be reacted with reactive metal(s) in the particulate material. Thus, the invention can further be modified by adding an iron-containing compound 32 to the particulate material 10 wherein the iron-containing compound will react with any excess sulfides that may have formed in the particulate material from the particulate material by binding to the excess sulfides to create an insoluble iron sulfide. The iron-containing compound should be admixed with the various additives described above and the particulate materials. The mixture is preferably agitated, in step ~~[[30]]~~34, at an agitation index of at least 5 and, more preferably, agitated at a level of about 5 to about 9. The temperature of the particulate material will influence the reactions by enhancing the reaction.